

Laparoscopic surgery for adult enterocolic intussusception: Case report and literature review[☆]



Cirugía laparoscópica en el tratamiento de la invaginación entero-cólica en el adulto: a propósito de un caso y revisión de la literatura

Intussusception (I) is caused by the telescoping or invagination of a generally proximal portion of intestine (*intususceptum*) into the adjacent, more distal portion of the intestinal lumen (*intususcipiens*). The concomitant

displacement of the mesentery of the telescoped portion can cause, in addition to the obstruction of transit, vascular compromise, which can lead to intestinal ischaemia. Ileocolic I is uncommon in adults (5%), in whom it is an infrequent cause of mechanical obstruction (1–5%).¹

We present the case of a 20-year-old man who was treated in the Emergency Department for a 1-day history of rectal bleeding and abdominal pain in the right flank. Examination revealed a distended and tympanic abdomen, with pain and guarding on palpation in the right iliac fossa. Notable in the blood tests were leukocytes of $15,640 \times 10^9/l$ with neutrophilia, and the abdominal X-ray showed dilated loops of small bowel with the absence of

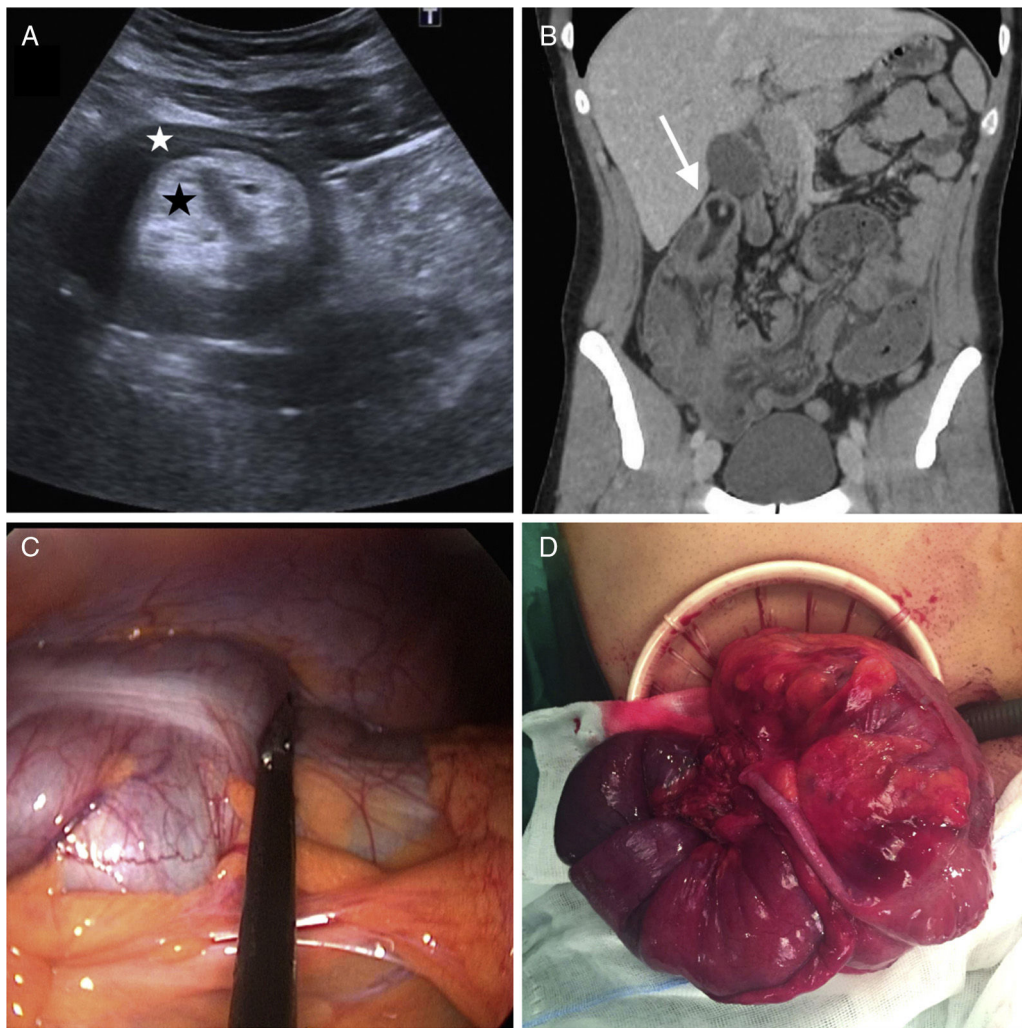


Figure 1 (A) Ultrasound target sign on a transverse section: hypoechogenic (white star) and hyperechogenic (black star) concentric bands. (B) Coronal CT section: hypodense tumour measuring 43 mm at the apex of the intussusception consistent with lipoma of the ileocaecal valve (white arrow). (C) Image of the laparoscopic surgery of the ileocolic intussusception. (D) Extracorporeal image of the ileocolic intussusception.

[☆] Please cite this article as: Payá Llorente C, Martínez Pérez A, Bernal Sprekelsen JC, Sebastián Tomás JC, Armañanzas Villena E. Cirugía laparoscópica en el tratamiento de la invaginación entero-cólica en el adulto: a propósito de un caso y revisión de la literatura. Gastroenterol Hepatol. 2018;41:255–257.

Table 1 Enterocolic intussusceptions treated by laparoscopy.

Study	Age	Gender	Type of I	Laparoscopic reduction attempt/success	Resection type	Aetiology
Park et al. (2001) ⁸	39	Male	ICI	Yes/yes	No resection	Ileal lipoma
McKay (2006) ⁴	63	Male	ICEI	No/no	RC	Ileal valve lipoma
Siow and Mahendran (2013) ¹	25	Male	ICI	Yes/yes	RC	Suspected typhoid colitis
	24	Female	ICI	Yes/yes	RC	Ileal Peyer's patches
Saito et al. (2013) ³	31	Male	ICEI	Yes/yes	Enterotomy and resection	Ileocaecal valve lipoma
Chen and Wu (2013) ⁶	39	Male	ICI	Yes/no	RC (SILS)	Ileal lipoma
Elm'hadi et al. (2015) ⁹	30	Female	ICEI	No/no	RC	Adenocarcinoma of caecum
Yang et al. (2016) ¹⁰	31	Male	ICEI	Yes/yes	Appendicectomy	Ileocaecal valve B-cell lymphoma

RC: right colectomy; ICI: ileocolic intussusception; ICEI: ileocaecal intussusception; SILS: single-incision laparoscopic surgery.

gas distally. The subsequently performed abdominal ultrasound and computed tomography (CT) showed ileocolic II secondary to a lipoma of the ileocaecal valve which was causing intestinal obstruction (Fig. 1A and B), and therefore emergency surgery was indicated. An exploratory laparoscopy was performed, during which the intussusception was localised. Following unsuccessful reduction manoeuvres, a right colectomy with extracorporeal end-to-side mechanical anastomosis was carried out (Fig. 1C and D). The patient had no postoperative complications and was discharged 7 days after the procedure. The histopathology study showed ileocolic intussusception with ileal transmural ischaemia secondary to Meckel's diverticulum (MD).

Intussusception (I) was first described by Barbette (1674) and later named as such by Hunter (1789). Intussusceptions (I) are classified according to location and may be ileoileal, enterocolic (ileocolic if the head of the intussusception is in the ileum and ileocaecal if the head of the intussusception is situated in the caecum or in the valve itself), and colocolic.² In contrast to the paediatric population, in adults, 70–90% of cases are secondary to an intraluminal lesion which acts as the head of the intussusception.³ Around 20–50% of these are malignant in origin, ranging in frequency according to localisation (70% in colocolic cases compared to 31% in ileal cases).⁴ The presence of MD as a cause of ileocolic intussusception in adults is uncommon,⁵ since, as this type is localised 60–80 cm from the ileocaecal valve, they require a very extensive *intususceptum* segment in order to occur. MD is the most common congenital malformation of the gastrointestinal tract (1–4%), but associated complications occur in only 16% of carriers. The most common is gastrointestinal bleeding, which usually occurs in children. The characteristic clinical triad of II in children (abdominal pain, palpable mass and rectal bleeding) occurs less frequently in adults,⁶ who for the most part first present with subacute/chronic clinical signs and symptoms of abdominal pain and/or symptoms of intestinal obstruction. Other possible, but less common complications of MD are diverticulitis, torsion or perforation.⁷ Abdominal ultrasound can provide a diagnosis in 60% of cases of I,⁵ identifying the characteristic

target sign on transverse section and the pseudokidney sign viewed on longitudinal section (multiple thin, concentric, hypoechoic and echogenic bands).³ CT is the diagnostic test of choice³ as it enables the intussusception to be localised and its aetiology to be established. Moreover, it is useful for the detection of associated complications, such as intestinal ischaemia or perforation.

Surgery is the treatment of choice for enterocolic II in adults and consists of the resection, with or without prior reduction, of the involved segment.¹ Reduction avoids the resection of long segments of intestine but can lead to delayed perforations or in tumour dissemination on account of the manoeuvres performed.² Consequently, it is only indicated after malignancy is ruled out and tissue viability can be confirmed. If these two requirements are not met, or in the case of technical inability, the treatment of choice is en bloc resection. Emergency surgery should be considered in view of signs and symptoms of intestinal occlusion, clinical deterioration of the patient and when intestinal ischaemia or perforation is suspected. Alternatively, surgery can be postponed so that a colonoscopy can be performed⁵ and an appropriate surgical strategy suggested which facilitates a subsequent laparoscopic approach. However, in spite of its advantages, the use of laparoscopy in enterocolic II intussusception in adults is practically anecdotal, with 8 cases described in the current literature (Table 1). In the majority of these cases, laparoscopic reduction prior to resection was performed successfully, and right colectomy with extracorporeal anastomosis was the technique most used. None of the cases required conversion to open surgery, and the postoperative course was good in all cases.

In our opinion, given that a laparoscopic approach makes it possible to achieve a complete exploration of the peritoneal cavity, which confirms the diagnosis and rules out associated complications as well as enabling the patient to achieve early postoperative recovery,³ it should be considered as a first therapeutic option in enterocolic II in adults, provided that it is possible based on patient characteristics and the extent of intestinal dilatation.

References

1. Siow SL, Mahendran HA. A case series of adult intussusception managed laparoscopically. *Surg Laparosc Endosc Percutan Tech*. 2014;24:327–31.
2. Morera-Ocón FJ, Hernández-Montes E, Bernal-Sprekelsen JC. Invaginación intestinal en el adulto: presentación de un caso y revisión de la literatura médica española. *Cir Esp*. 2009;358–62.
3. Saito K, Osawa H, Morohara K, Nakamura K, Kimura S, Okada A, et al. Laparoscopy-assisted resection of ileocecal intussusception caused by ileal pedunculated lipoma. *Int Surg*. 2013;98:330–3.
4. McKay R. Ileocecal intussusception in an adult: the laparoscopic approach. *JSLs*. 2006;10:250–3.
5. Wang N, Cui X-Y, Liu Y, Long J, Xu Y-H, Guo R-X, et al. Adult intussusception: a retrospective review of 41 cases. *World J Gastroenterol*. 2009;15:3303–8.
6. Chen JH, Wu JS. Single port laparoscopic right hemicolectomy for ileocolic intussusception. *World J Gastroenterol*. 2013;19:1489–93.
7. Payá-Llorente C, Garrigós-Ortega G, Martínez-Pérez A, Trullenque-Juan R, Amañanzas-Villena E. Giant Meckel's diverticulum torsioned. An unusual presentation. *Rev Esp Enfermedades Dig*. 2015;107:393–4.
8. Park KT, Kim SH, Song TJ, Moon HY. Laparoscopic-assisted resection of ileal lipoma causing ileo-ileo-colic intussusception. *J Korean Med Sci*. 2001;16:119–22.
9. Elm'hadi C, Tarchouli M, Khmamouche MR, Tanz R, Elfahssi M, Kettani F, et al. Intestinal intussusception in a young women: unusual cause and specific management. *World J Surg Oncol*. 2015;13:252.
10. Yang TW, Lin YY, Tsuei YW, Chen YL, Huang CY, Hsu SD. Successful management of adult lymphoma-associated intussusception by laparoscopic reduction and appendectomy. *World J Gastroenterol*. 2016;22:4781–5.

Carmen Payá Llorente*, Aleix Martínez Pérez,
Juan Carlos Bernal Sprekelsen,
Juan Carlos Sebastián Tomás, Ernesto Armañanzas Villena

*Servicio de Cirugía General y del Aparato Digestivo,
Hospital Dr. Peset de Valencia, Valencia, Spain*

*Corresponding author.

E-mail address: carmenpayallorete@gmail.com

(C. Payá Llorente).

2444-3824/

© 2017 Elsevier España, S.L.U. All rights reserved.

Non traumatic pseudoaneurysm of the cystic artery as a cause of haemobilia[☆]



Pseudoaneurisma no traumático de la arteria cística como causa de hemobilia

The term haemobilia refers to any gastrointestinal bleeding originating from the biliary Tree.¹ Its aetiology is quite varied and determines the necessary treatment. Currently, most cases are secondary to accidental or iatrogenic trauma.² Vascular disorders, such as arterial pseudoaneurysms, are an uncommon cause. This article will look at 2 cases of haemobilia secondary to pseudoaneurysms of the cystic artery, both associated with symptoms of acute cholecystitis.

The first case is a 74-year-old male patient with right upper quadrant pain associated with fever, haematemesis and melaena. His lab results showed elevated amylase, lipase and cholestasis markers. An upper gastrointestinal (GI) endoscopy was performed, which revealed bleeding from the duodenal papilla. A CT angiogram showed a 2-cm pseudoaneurysmal lesion adjacent to the infundibulum of the gallbladder, with a large gallstone lying in that region (Fig. 1) as well as signs of acute cholecystitis. The patient had a vascular anatomical variant: common hepatic artery with origin in the superior mesenteric artery, dividing

into 3 branches before the hepatic hilum. An arteriogram was then performed which revealed the pseudoaneurysmal lesion, without managing to identify the artery supplying the pseudoaneurysm, making embolisation impossible. Finally, the patient underwent laparoscopic surgery, which revealed acute cholecystitis with active gallbladder bleeding, requiring conversion to open cholecystectomy. He had a large 3 × 2 cm gallstone lying against the wall of the gallbladder within the infundibulum, eroding the aforementioned pseudoaneurysm.

The second case is a 74-year-old female patient with right upper quadrant pain, fever and melaena, who developed anaemia during her hospital stay. She had elevated cytotoxic and cholestasis markers. An abdominal ultrasound revealed acute cholecystitis with echogenic material within the gallbladder lumen and dilatation of the intrahepatic bile duct. The upper GI endoscopy showed blood clots in the 2nd part of the duodenum extruding from the papilla.

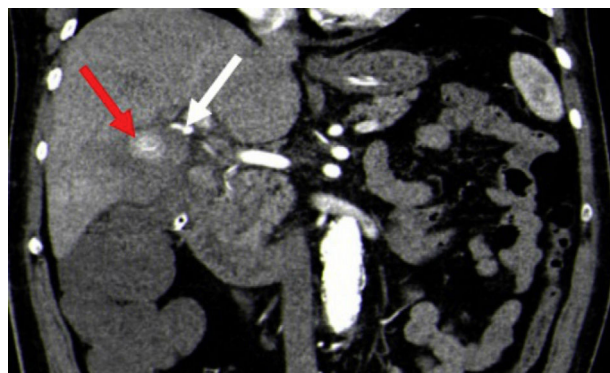


Figure 1 White arrow: pseudoaneurysm. Red arrow: gallstone.

[☆] Please cite this article as: Medina Velázquez R, Casimiro Pérez JA, Acosta Mérida MA, Marchena Gómez J. Pseudoaneurisma no traumático de la arteria cística como causa de hemobilia. *Gastroenterol Hepatol*. 2018;41:257–259.